Claims

1. A system to treat diseases based on biological activities, comprising:
   biological activity sensing means which senses biological activity information issued by biological activities, and outputs biosignals;
   calculating means which receives the biosignals sensed by the biological activity sensing means, analyzes and processes the biosignals to calculate signals for the stimulation of organisms, and outputs the signals for the stimulation of organisms; and
   organism stimulating means which receives the signals for the stimulation of organisms calculated by the calculating means, and stimulates the organism on the basis of the signals for the stimulation of organisms.

2. A system to treat diseases based on biological activities, comprising:
   biological activity sensing means which senses biological activity information issued by biological activities, and outputs biosignals;
   calculating means which receives the biosignals sensed by the biological activity sensing means, analyzes and processes the bisignals to calculate signals for the stimulation of organisms, and outputs the signals for the stimulation of organisms; and
   organism stimulating means which receives the signals for the stimulation of organisms calculated by the calculating means, and stimulates the organism on the basis of the signals for the stimulation of organisms, wherein
   the calculating means includes discriminating means which discriminates whether the received biosignals are caused by normal biological activities or by abnormal biological activities, the calculating means does not output the signals for the stimulation of organisms when the received biosignals are discriminated to be caused by normal biological activities, and the calculating means outputs the signals for the stimulation of organisms when the received biosignals are discriminated to be caused by abnormal biological activities.

3. A system to treat diseases based on the biological activities according to Claims 1 or 2, wherin
   signals for the stimulation of organisms are calculated by convolution integral between impulse response previously obtained from normal biological activities and the biosignals sensed by the biological activity sensing means.

4. A cardiac pacing system based on biological activities, comprising:
   nerve activity sensing means which senses nerve activities of cardiac sympathetic nerve and/or vagal nerve, and outputs nerve activity signals;
   calculating means which receives the nerve activity signals sensed by the nerve activity sensing means, analyzes and processes the nerve activity signals to calculate pacing signals for the control of heart rate, and outputs the pacing signals; and
   pacing means which receives the pacing signals calculated by the calculating means, and stimulates the heart on the basis of the pacing signals to regulate heart rate.

5. A blood pressure regulating system, which uses the native regulation rule to estimate nerve activities in response to blood pressure changes, comprising:
   blood pressure sensing means which senses blood pressure and outputs a blood pressure signal;
   calculating means which receives the blood pressure signal sensed by the blood pressure sensing means, analyzes and processes the blood pressure signal to calculate sympathetic nerve stimulation signal for the regulation of blood pressure by the stimulation of sympathetic nerve innervating vascular beds, and outputs the sympathetic nerve stimulation signal; and
   stimulating means which receives the sympathetic nerve stimulation signal calculated by the calculating means, and stimulates the sympathetic nerve innervating vascular beds on the basis of the sympathetic nerve stimulation signal for the regulation of blood pressure.

6. A system to treat cardiac diseases based on biological activities, comprising:
   cardiovascular activity sensing means which senses cardiovascular activity information issued by cardiovascular

system, and outputs cardiovascular activity signals;

calculating means which receives the cardiovascular activity signals sensed by the cardiovascular activity sensing means, analyzes and processes the cardiovascular activity signals to calculate nerve stimulation signals, and outputs the nerve simulation signals; and

nerve stimulating means which receives the nerve stimulation signals calculated by the calculating means, and stimulates the nerve on the basis of the nerve stimulation signals.

Article 19 Amendment:

What is claimed is:

1. (Amended) A system to treat diseases based on biological activities, comprising:
   biological activity sensing means which senses biological activity information issued by biological activities, and outputs biosignals;
   calculating means which receives the biosignals sensed by the biological activity sensing means, calculates signals for the stimulation of organisms by convolution integral between impulse response previously obtained from normal biological activities and the biosignals sensed by the biological activity sensing means, and outputs the signals for the stimulation of organisms; and
   organism stimulating means which receives the signals for the stimulation of organisms calculated by the calculating means, and stimulates the organism on the basis of the signals for the stimulation of organisms.

2. (Amended) A system to treat diseases based on biological activities, comprising:
   biological activity sensing means which senses biological activity information issued by biological activities, and outputs biosignals;
   calculating means which receives the biosignals sensed by the biological activity sensing means, calculates the signals for the stimulation of organisms by convolution integral between impulse response previously obtained from normal biological activities and the biosignals sensed by the biological activity sensing means, and outputs the signals for the stimulation of organisms; and
   organism stimulating means which receives the signals for the stimulation of organisms calculated by the calculating means, and stimulates the organism on the basis of the signals for the stimulation of organisms, wherein
   the calculating means includes discriminating means which discriminates whether the received biosignals are caused by normal biological activities or by abnormal biological activities, the calculating means does not output the signals for the stimulation of organisms when the received biosignals are discriminated to be caused by normal biological activities, and the calculating means outputs the signals for the stimulation of organisms when the received biosignals are discriminated to be caused by abnormal biological activities.

3. (Deleted)

4. (Amended) A cardiac pacing system based on biological activities, comprising:
   nerve activity sensing means which senses nerve activities of cardiac sympathetic nerve and/or vagal nerve, and outputs nerve activity signals;
   calculating means which receives the nerve activity signals sensed by the nerve activity sensing means, calculates pacing signals for the control of heart rate by convolution integral between impulse response previously obtained from normal nerve activities and the nerve activity signal sensed by the nerve activity sensing means, and outputs the pacing signals; and
   pacing means which receives the pacing signals calculated by the calculating means, and stimulates the heart on the basis of the pacing signals to regulate heart rate.

5. A blood pressure regulating system, which uses the native regulation rule to estimate nerve activities in response to blood pressure changes, comprising:
   blood pressure sensing means which senses blood pressure and outputs a blood pressure signal;
   calculating means which receives the blood pressure signal sensed by the blood pressure sensing means, analyzes and processes the blood pressure signal to calculate sympathetic nerve stimulation signal for the regulation of blood pressure by the stimulation of sympathetic nerve innervating vascular beds, and outputs the sympathetic nerve stimulation signal; and
   stimulating means which receives the sympathetic nerve stimulation signal calculated by the calculating means, and stimulates the sympathetic nerve innervating vascular beds on the basis of the sympathetic nerve stimulation

signal for the regulation of blood pressure.

6. A system to treat cardiac diseases based on biological activities, comprising:

cardiovascular activity sensing means which senses cardiovascular activity information issued by cardiovascular system, and outputs cardiovascular activity signals;

calculating means which receives the cardiovascular activity signals sensed by the cardiovascular activity sensing means, analyzes and processes the cardiovascular activity signals to calculate nerve stimulation signals, and outputs the nerve simulation signals; and

nerve stimulating means which receives the nerve stimulation signals calculated by the calculating means, and stimulates the nerve on the basis of the nerve stimulation signals.